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ABSTRACT

The socioeconomic growth of Alaska is analyzed with its related demographic statistics and historical trends. The cultural and cross-cultural effects are considered, along with factors relating to industrialization and geography to arrive at predictive figures for the population of the state. Other influences on the economy are reported in terms of employment and income factors. The objective of the study was to reveal the magnitude of the economic development of Alaska and to provide statistical data for more detailed study. (BD)

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Background Paper - 1.A.

CONFERENCE ON CROSS-CULTURAL EDUCATION IN THE NORTH

Montreal - August 1969

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THE ECONOMIC SITUATION IN THE NORTH

The Cross-Cultural Economic Situation In The North: The Alaska Case

George W. Rogers
University of Alaska

This Conference is concerned with the gulf that separates the indigenous from the non-indigenous peoples of the North. My contribution is to focus upon the changing economic situation in the North and the involvement of the indigenous population in these developments. Rather than attempt a general overview of the entire circum-polar North, I will deal only with that section in which I live and work. Although a choice made for personal convenience, my observations, analysis, and conclusions will have broader application. For each of you involved in other political subdivisions of the North, there will be elements in the Alaska situation which are to be found in your own North. Alaska is large enough to embrace almost every type of physical environmental and natural resource situation to be found elsewhere. Its history of Western contact, penetration and domination is slightly shorter than its immediate western and eastern neighbors, the eastern sections of Siberia and the northern territories of Canada, but Alaska has moved further up the scale of political development having the status of a "sovereign" state of the United States with relatively broad powers of local self-determination. In common with the rest of the North, our past has been characterized by fluctuations in economic activity marked off in well-defined and highly specialized periods. Our present, as well as our past, is characterized by a mixture of high hopes for the future which erase the lost hopes of the past.

Our native people (the term "native" having recently lost its slightly derogatory colonial connotation, will be used in place of the more cumbersome "indigenous people") have experiences since the first European contacts which repeat those of all circum-polar peoples. But in keeping with Alaska's total political development, they also have made recent advances and have found political voices and means for implementing their objectives through the exercise of land claims. In the interest of simplicity and avoidance of duplication of other contributors, I have purposely avoided any comment on these critically important developments, although everything I will have

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to say can be taken as illumination of these political events and developments.[1] I am here only concerned with attempting to measure crudely the degree to which Alaska natives have participated in Alaska's economic development and the future prospects.

A few simple definitions should be given here in order to avoid future confusion. "Native population" represents the people who are indigenous to Alaska. There are several groups within this general classification having distinctive cultural and physical characteristics, but they all share the common ones of aboriginal ancestry and permanent residence within Alaska. The common denominator among the "non-native" peoples is that they are all recent migrants or descendants of recent migrants, some few of whom become residents, the majority being transients. The gulf between Alaska's natives and non-natives when measured in terms of economic and physical well-being is so wide that most writers have come to talk of there being two separate and distinct Alaskas rather than one.

Native Alaska is quite diverse in terms of cultural differences and physical environments. The present day Native Alaskans are descended from a variety of aboriginal economic and social systems, each reflecting the geographical and natural resources differences of the regions in which they developed and the ethnic inheritance of their original settlers from Asia. At the time of the first European contacts, the southeast region supported an estimated 10,000 Tlingit and 1,800 Haida Indians who were part of the high primitive culture of the northwest coast of North America. The mild climate and abundance of readily harvestable resources (particularly marine resources) provided the wealth and leisure for elaboration of a remarkably rich culture and sophisticated social system. Several subdivisions of the Western Eskimo and Aleut inhabited the Arctic, Bering Sea, Aleutian, and Gulf of Alaska coastal regions and at places penetrated inland as hunters of caribou. The estimates of Western Eskimo at the time of first "historical" contacts put about 6,300 along the Arctic coast, 600 Siberian Eskimos on St. Lawrence and the Bering Strait, 11,000 along the Bering Sea coast and the Yukon and Kuskokwim delta lands, and 8,700 on Kodiak Island and along the Gulf coast as far east as the Copper River delta. An estimated 16,000 Aleuts followed a maritime existence along the chain of the Aleutian Islands and on to the Peninsula. Some 6,900 representatives of the Northern Athapaskan were scattered in small tribal groups throughout the vast woodlands of interior Alaska and had penetrated through the Alaska Range southward into the Cook Inlet and Copper River regions. Traces of the linguistic and cultural characteristics of each of these main divisions of the native people survive to this day, being strongest among those living in the villages and weakest among the second generation which has attempted to move physically and culturally into the dominant non-indigenous society and economy.

My analysis will be limited to statistical data which is readily

available and understandable, the census data on population and its social and economic characteristics and employment and income series. The subjects treated will be Alaska's total economic development as translated into population trends, and measures of the degree to which native population has been identified or involved in these developments. The objective of the whole exercise is not to penetrate deeply into the subject but, possibly for the first time, attempt to suggest its magnitude. The methodology, of course, can be applied to other political divisions of the North by those who have the necessary background to interpret and use the available statistics.

B.P. - 1.A.

I. ALASKA DEVELOPMENT AND POPULATION CHANGE.

European explorations of the Pacific Northwest during the eighteenth century prepared the way for the extension of the Russian and the British fur trades into what is now Alaska and launched the colonial development of Alaska. For varying periods of destructive exploitation, whaling (1847-53) and the harvesting of fur seal and sea otter pelts (1768-1911), together with a variety of land furs, set the pattern; but within ten to twenty years after the transfer to the United States, the primary base had begun to shift to other resources. The beginnings of the canned salmon industry (1878 in southeastern and 1882-84 in central and western Alaska), the discovery of gold lode deposits in southeastern Alaska (1880), and the gold placers at Nome and in the Interior (1898-1906) provided the base for an expanded colonial economy. Between 1911 and 1938 copper ore production from the Kennecott mines made a further major contribution (from 1915 through 1928 value of copper production exceeded that of gold), and a few other natural resources made very minor contributions. But during the decade before its eclipse by World War II and its aftermath, the economic base of Colonial Alaska rested primarily upon the production of only two highly specialized products -- gold and canned salmon.

The extent of this colonial specialization is highlighted in statistics of Alaska's external trade. During the 1931-40 decade, the most recent decade for a predominantly peacetime civilian economy, average annual value of out-shipments totaled $58,758,000, of which the two leading items were canned salmon ($32,582,000, or 55.1 percent of total shipments), and gold ($15,764,000, or 26.6 percent). All other out-shipments together accounted for only 18.3 percent of the total. Defense was an insignificant element in the total economy. The average annual expenditures in Alaska of the Department of War, Corps of Engineers, and Department of the Navy was $1,546,046 for the five fiscal years 1933 through 1937. Most of this was for essentially civilian programs of river and harbor projects of the Corps of Engineers, communications system construction and operation by the Army Signal Corps, and the maritime safety and navigational aids of the Coast Guard. Despite the preaching of the early prophets of the new air age, it was not until the onset of World War II and the actual invasion and occupation of United States soil that Alaska's strategic location came to be recognized, not as a defense liability, but as a natural bulwark for the North American continent. The October 1, 1939 census reported only 524 military personnel in all of Alaska.

Colonial Alaska was eclipsed between 1940 and 1942 by the coming of World War II to Alaska. But even without this new element,

it was already declining, its props of canned salmon, gold, and fur having been seriously eroded by overexploitation or changed economic conditions. For the next two decades defense, government, and supporting economic activities were Alaska's basic economy. Employment income generated by all of Alaska's fisheries, canneries, and other processing plants, and pulp mills, mines, farms, traplines, etc., combined was exceeded by the miliary payrolls, and personnel alone was equalled by that in tertiary industries other than government and was just barely above that arising from the single industrial classification "contract construction." This eclipsing of natural resources as the major element in Alaska's basic economy is not surprising. Alaska's military importance lay in its strategic location and the availability of relatively unlimited space for airfields, bombing ranges, etc., not in its natural resources. Consideration of economic factors was likewise not a matter of primary military concern, and defense construction had the effect of greatly increasing labor costs in an already high-cost area. This created barriers to resource development which might have come along with the normal passage of time.

By the advent of the sixties, the defense economy had levelled off and its employment and income-producing capacity began to decline. The granting of statehood to Alaska in 1959 represented the highest political development possible for a territory within the United States. Future economic development was significantly conditioned by this political fact. At the same time, the economy was beginning to shift to another and entirely different basis resulting from the State's increasing international importance as a strategic link in intercontinental air travel and transportation, and as a source of a broad range of natural resources for domestic and foreign markets. From the peaks of expenditures for construction, procurement, and personnel during the mid-1940's and early 1950's, the annual expenditures of the U.S. Department of Defense have shown a steady decline, from $416.9 million in 1954 to $315.3 million in 1966 (including the value of some 1964 earthquake reconstruction). The value of wood products had been negligible prior to the construction of the first pulp mill in 1954, after which it rose from $14.6 million in 1954 to $67.8 million in 1966. There had been no significant production of petroleum or natural gas until the discoveries at Swanson River on the Kenai Peninsula in July 1957 ushered in the Kenai and Cook Inlet oil and gas booms. The value of petroleum and natural gas production from these fields during 1966 was $50.3 million. Other discoveries were made in this region, but the most spectacular was the discovery in July 1968 at Prudhoe Bay on Alaska's Arctic slope. Initial estimates of reserves in this new field ranged from 5 to 10 billion barrels, and a rush of exploration and development activities spread over most of the north slope, with good prospects of further major discoveries. Fisheries production rose in value, reflecting some improvement in the salmon fisheries by the mid-1960's, but to a greater extent the expansion of new fisheries such as king crab. As the decade of the 1960's approach their close, the immediate prospect for greater natural resource development looks excitingly promising.

B.P. - 1.A.

This first part will be concerned with reviewing population trends as indices of economic and social trends. The decennial census data and earlier estimates will provide the basis for analysis of the trends from 1740 to 1960. The treatment of the "past" will stop with the 1960 census. The level of military personnel stationed in Alaska appeared to have achieved a plateau and military construction and, as noted above, related economic activities declined during the decade of the fifties with no reversals during the sixties. The new major natural resources developments initiated during the late 1950's had not advanced by the date of the 1960 census to the stage of registering the subsequent impacts upon population. Closer examination of the period of transition from 1940 to 1968 is provided by shifting the analysis from decennial data (which have the dual disadvantage for Alaska of being too infrequent and coming at the wrong time of the year) to annual population estimates made by the U.S. Bureau of the Census and the Alaska Department of Labor. This also will provide a more appropriate and detailed introduction to consideration of anticipated future trends to the end of the century which concludes this part.

Population Trends and Composition, 1740-1960

Population trends are the end product of economic and social factors and can serve as convenient means for approximating the direction, levels, and the timing of the important turning points in the more difficult to identify and measure development trends. The last two hundred years of Alaska's past can be restated with population data summarized from estimates of the number of Alaskans at the time of the first European contacts through a selection from the several Russian and United States census reports (Table 1). The expansion of commercial fisheries and gold mining is reflected in the rise in non-native population from the few hundred during the Russian and initial United States periods to 34,056 and 39,025 in the 1900 and 1909 census counts. The period of stabilization and stagnation of the basic economy of gold, fish, copper, and furs is reflected in the decline between 1909 and 1929 in non-native population, and the effects of the Great Depression outside Alaska in stimulating increased gold production and a "return to the land" by the regaining of the 1909 population level by 1939.

The dramatic expansion in population by 1950 can be traced directly to the movement of large numbers of military or defense personnel into Alaska, jumping from 524 in 1939 to 20,643 in 1950. Counting the increase in military personnel alone does not indicate the full magnitude of this new source of population. Accompanying those in uniform were an equal number of dependents, several thousand civilian employees of the Department of Defense (and their

TABLE 1

General Population Trends in Alaska, 1740-1960

Year or Date		Total		Native		Non-Native		Military Personnel (Included In Non-Native)
		No. of Persons	Trend 1/	No. of Persons	Trend 1/	No. of Persons	Trend 1/	
Circa	1740-80	74,000	32.7	74,000	100.0	---	---	
	1839	39,813	17.6	39,107	52.8	706	0.4	
	1880	33,426	14.8	32,996	44.6	430	0.2	
	1890	32,052	14.2	25,354	34.3	6,698	3.7	
June 1,	1900	63,592	28.1	29,536	39.9	34,056	18.6	
Dec. 31,	1909	64,356	28.5	25,331	34.2	39,025	21.3	
Jan. 1,	1920	55,036	24.3	26,558	36.0	28,478	15.6	
Oct. 1,	1929	59,278	26.2	29,983	40.5	29,295	16.0	
Oct. 1,	1939	72,524	32.1	32,458	43.8	40,066	26.9	(524)
Apr. 1,	1950	128,643	56.9	33,863	45.8	94,780	51.8	(20,643)
Apr. 1,	1960	226,167	100.0	43,081	58.2	183,086	100.0	(32,692)

1/ Number of persons expressed as percentage of maximum for each series.

Sources: 1740 based upon estimates by Mooney (1928) published in J.W. Swanton, The Indian Tribes of North America, Bulletin 145, Washington Bureau of American Ethnology (1952). Estimates for 1839 based upon reports by Venianinov (1835), and "Resources of Alaska," 10th Census of the United States, 1880, Vol. VIII, Washington, D.C., 1884, pp. 36-38. Other data from regular U.S. Bureau of the Census Reports for 1880 through 1960.

dependents), and a fluctuating labor force of construction, services, and other supporting workers directly related to the construction and maintenance of the new Alaska military establishment. In view of the decline of the pre-World War II basic economy, virtually all of the increased population between 1939 and 1950 might be attributed to the shift in the basic economy from the limited base of the first half of the twentieth century to a military economy. The level of military personnel continued to rise and remained at about 50,000 for the period from 1952-1957. There was a sharp drop to about 35,000 in 1958 (due to technological changes), and the level reported in 1960 has continued with minor changes to the present.

The stabilization of the number of military personnel during the 1950's and subsequent decline to a lower plateau during the 1960's would be expected to be reflected in similar behavior of the military-related civilian economy, but the total population has continued to rise since 1960. New natural resource developments following the end of World War II, particularly the major petroleum and forest products developments, and the expansion of civilian government services in response to the needs of the larger and more settled population of today have created more jobs than could be filled from local sources, and a new in-migration of workers and their families from Outside has offset any decline in military-related population and continued to swell the total population. Looking into the future, the complex of anticipated development projects can be translated via employment calculations into the common denominator of population and afford a means of tracing the probable course of the future in terms permitting direct comparisons with the present and the past.

The shape of Alaska's past economic development, as noted above, can be traced using the decennial census enumerations as a general indicator of the trend and its major turning points. Beyond this, segregation of these data by native and non-native persons, and more recently military and their dependents, reveals quite distinctive trends among these major components of Alaska's total population which are obscured or lost in their combination (Table 1). These components each have quite different characteristics and their trends represent response to different forces. The least complicated is the combination of military personnel, Defense Department civilian employees, and the dependents of both these employed groups. Together these persons are a pool of population increasing or decreasing in size in response to forces external to Alaska (national political considerations, changes in the international situation, changes in defense technology, etc.) but retaining a relatively constant internal composition. Within this sector the population comparison reflects a selective and stable range of age, sex, and occupation patterns, administratively determined by the forms of employment required by the defense establishment practices of rotation of personnel and dependents on a relatively short tour-of-duty basis.

The native population dynamics have been primarily the result of natural forces of fertility and mortality. Until recently it had been assumed that there was very little migration out of Alaska and relatively little within the regions of Alaska. During the 1950's and 1960's there has begun to be evidence of growing geographic mobility, but only in the last five years has this seemed significant.

Reviewing past historical trends, the general decline from an estimated 74,700 persons circa 1740-1780 to about one-third that number during the first two decades of the present century follows the classic pattern of the disruptive contact between a self-sufficient subsistence culture of an aboriginal people and specialized and exploitive colonial forces. The destruction of aboriginal self-sufficiency through specialization of activities and depletion of the former natural resource base, the depredations of unfamiliar diseases and customs all took their toll. The accelerating increase in native population starting in the late 1920's and assuming explosive proportions in the 1950's, with the total regaining about two-thirds of the 1740-1780 population by 1960, reflects improvement in general economic conditions in some regions, but more generally successful programs of public health and welfare and keeping people alive, in combination with an absence of official birth control programs.

The remainder of the population, the non-native-and non-defense-related population, is the most erratic in its trends over time, in- or out-migration in response to economic factors being its primary determining force. With certain lags and recent shifts toward a more balanced sex ratio and more normal age distributions over all ranges, these data reflect an almost purely economic development population response. Outside workers have come in when jobs were available and have tended to leave Alaska when they reach retirement age or their employment ends. The practice of retiring outside Alaska when the normal employment age limits are reached is indicated in the abnormally low proportion of non-native people 65 years or over. The highly seasonal employment patterns and the heavy reliance upon seasonally imported workers in many industries and the relatively high proportion of Alaska unemployment checks mailed to outside addresses are evidences of the high mobility of this population component.

Alaska is not a single homogeneous entity and its study has always been based upon some form of regional sub-division in terms of physical, climatological, or natural resource features. The earliest surveys and reports divided Alaska into geographical provinces. Administrative units, from the earliest recording districts and judicial divisions to the present election districts and administrative divisions of the State of Alaska, represent attempts to define meaningful and manageable entities. A study of statistical data and other information gathered in terms of these smaller local units indicates that there have been and are several contrasting sub-economies within the State, each with different structure and often oppos-

ing trends. Recently there have been attempts to find some general agreement on a basic division of the State which would be useful for both administrative and research purposes. The following five-unit division used here was proposed by the State Division of Planning in 1962 as an attempt to combine natural regional elements with economic development focus and has found general acceptance (Figure 1). This division, for example, has been used in the U.S. Department of the Interior 1967 Rampart power project studies, the Bureau of Public Roads 1965 highway study, and a number of important works done for federal and state agencies by private consultants. [2]

(1) Southeast Region (land area 37,566 square miles), set off from the rest of the State by the Malaspina Glacier and the St. Elias Range, comprises the many islands of the Alexander Archipelago and a strip of mainland extending along the northwest corner of British Columbia. Gold mining disappeared from the regional economy with World War II, but fisheries have continued and forest products (primarily wood pulp) have been the source of recent growth.

(2) Southcentral Region (land area approximately 80,000 square miles) comprises the southcentral coastal area of Alaska south and east of the arc of the Alaska Range. It includes the Susitna River basin, Cook Inlet and its tributaries, the Cooper River basin, and Kodiak Island and other islands in the Gulf of Alaska. Its economy includes the main military, finance, trade, and transportation centers of the State, important fisheries, and the presently producing petroleum areas.

(3) Southwest Region (land area approximately 150,000 square miles) includes the Alaska Peninsula, Aleutian Islands, Bering Sea islands south of latitude 62 degrees north, the Bristol Bay drainage, Kuskokwim River basin, and the lower Yukon River basin (south of 64 degrees north).

(4) Interior Region (land area approximately 180,000 square miles) includes the remainder of the Yukon River basin, the Tanana and Koyukuk River basins, and the eastern part of the Arctic Slope within the Fairbanks election district. Until the recent closing down of dredging operations, this was the "Golden Heart of Alaska." It is the second most important military region and is now taking on the new role of transportation gateway to the North Slope petroleum provinces.

(5) Northwest Region (land area approximately 125,000 square miles) is the remainder of the State, its extreme northwestern corner. Mining and furs have provided the basic economy and there are prospects of petroleum in the future.

These five regions are not only different in terms of physical geographic characteristics and natural resource endowment, but exhibit clearly different economic and social characteristics and

trends. Looking at only a few of the population characteristics reported in the 1960 census (Table 2), in the southwest and northwest regions, the native population, or persons of aboriginal ancestry, are in the majority and in the other three regions they are minority groups. These two regions also exhibit the lowest per capita incomes (including estimated value of subsistence hunting and fishing) and the highest ratio of non-workers to workers. The southcentral and interior regions have had the greatest absolute and relative population growth in recent years, the highest proportion of military and government workers to total population, the highest per capita incomes, and the lowest non-worker to worker ratios. The southeast region has the lowest proportion of military in its population and government employment in its total employed labor force. The distribution of the census enumerations by major population components among these regions reveals over time further aspects of their behavior. Within each of the regions the native population exhibits a similar U-shaped curve. The non-native population for each region exhibits considerably more erratic behavior than for the total Alaska as counterbalancing effects of opposing regional trends are now eliminated (Table 3).

Estimates of Annual Population and Components of Change, 1940-1968

As valuable as the census data are in establishing population and development bench marks, a ten-year period is too long to pinpoint the critical turning points. The gold stampedes at the turn of the century reached their climax of activity and population influx in the years between the taking of the official census. Nome had begun to decline in population when the census was taken on June 1, 1900, and the 1904 rush into the Tanana Valley, which resulted in the founding of Fairbanks, was history when the December 31, 1909, census was taken. Similarly, the turning points in World War II and the Cold War which followed all fell within periods between October 1, 1939, April 1, 1950, and April 1, 1960. Because of this, the Bureau of the Census has attempted to compute annual estimates of current resident population for each state with estimates of components of change. For Alaska these estimates are available back to July 1, 1940. Although the estimates are given as of a mid-year date, they do not represent an estimate of the total population at that date, but the resident population. No adequate definition of "resident" Alaskan exists, but in this case the figure is the twelve month moving average computed from monthly vital statistics and migration estimated by use of school enrollment data. Following the 1960 census, the Alaska Department of Labor published annual estimates of current resident population by election districts (the 1960 census districts) using the same methodology and basic data as the Bureau of the Census. These two sources are drawn upon to present an analysis of annual population changes for Alaska from 1940 to 1968 and for its major regions. In addition, estimates have been made of native population by relating annual statistics on native births or deaths to the 1950 and 1960 census bench marks.

TABLE 2

Social and Economic Characteristics of

Alaska Population by Major Sub-Regions, 1960

	Total	South-east	South-central	South-west	Interior	North-west
Population 1950 Census - Total	128,643	28,203	50,093	17,715	23,008	9,624
Population 1960 Census - Total	226,167	35,403	108,851	21,001	49,129	11,784
White	174,546	25,354	98,733	6,381	41,789	2,289
Native	43,081	9,242	5,514	14,314	4,638	9,373
Other Races	8,540	807	4,604	306	2,701	122
% Native	19.0	26.1	5.1	68.1	9.4	79.5
Civilian	193,474	34,794	91,666	17,697	38,282	11,036
Military	32,692	609	17,185	3,304	10,846	748
% Military	14.4	1.7	15.8	15.7	22.1	6.3
Growth 1950-60)percent)	75.8	25.5	117.3	18.5	113.5	22.4
Personal Income Calendar Yr. 1960						
Total (Million $)	629	97.9	331.6	41.0	139.5	18.9
Per Capita ($)	2,781	2,761	3,046	1,952	2,840	1,604

Continued

TABLE 2

Social and Economic Characteristics of

Alaska Population by Major Sub-Regions, 1960

	Total	South-east	South-central	South-west	Interior	North-west
Employment Census Week 1960						
Total	90,923	13,678	46,209	5,998	22,179	2,859
Government	51,941	4,499	26,948	4,422	14,733	1,339
Private	38,982	9,179	19,261	1,576	7,446	1,520
% Government	57.1	32.9	58.3	73.7	66.4	46.8
Non-Worker to Worker Ratio	1.27	1.38	1.15	2.22	1.06	2.35
% of Employable Population not working or working less than 13 weeks during 1959	35.2	36.8	32.3	51.8	29.9	54.5
Education Levels Persons 25 yrs. old and over, 1960						
% No Education	3.5	2.0	0.9	22.2	2.5	11.2
% with 1-8 yrs. school	22.8	27.1	16.9	39.9	19.4	58.7
% with more than grade school	73.6	70.9	82.2	37.9	78.4	30.1
Infant Mortality Rates, 1960						
Deaths under 1 year of age per 1,000 live births						
Native	74.8	55.1	48.7	121.9	62.8	82.4
Non-Native	27.8	24.5	30.8	99.0	22.8	55.5

Source: Data from U.S. Bureau of the Census reports as presented in R. Cooley and G. Rogers, Alaska's Population and Economy, Volume II.

TABLE 3

Alaska's Native and Non-Native Populations, By Regions, 1740-1960

Year or Date	Southeast		Southcentral		Southwest		Interior		Northwest	
	Native	Non-Native	Native	Non-Native	Native	Non-Native	Native	Non-Native	Native	Non-Native
Circa 1740-80	11,800	-	3,700	-	26,000	-	5,200	-	28,000	-
1880	7,455	293	4,318	34	13,826	88	2,560	8	4,837	7
1890	5,967	2,071	3,566	2,546	10,660	1,411	2,188	145	2,973	525
June 1, 1900	5,800	8,550	4,000	6,000	9,600	3,400	3,000	2,600	7,142	13,500
Dec. 31, 1909	5,866	9,350	3,205	9,695	7,326	4,723	2,403	10,661	6,531	4,596
Jan. 1, 1920	5,357	12,045	3,000	8,173	10,151	1,390	2,500	5,464	5,550	1,406
Oct. 1, 1929	5,990	13,314	3,559	8,321	10,735	1,383	3,329	4,917	6,370	1,360
Oct. 1, 1939	6,502	18,739	3,974	10,907	10,858	1,988	3,462	6,883	7,662	1,549
April 1, 1950	7,929	20,274	3,788	48,399	10,838	6,877	3,666	19,342	7,663	1,961
April 1, 1960	9,242	26,161	5,514	103,337	14,314	6,687	4,638	44,490	9,373	2,411

Source: Same as Table 1.

Tables 4 and 5 summarize these annual population estimates for Alaska and its five major regions. The annual changes in non-native population are even more erratic than the behavior revealed in the decennial census reports. In part this reflects the relatively small population base, where only a few hundred persons constitute a significant change, but in larger part it reflects population response to the shifting role of Alaska in national defense strategies since 1940. Reviewing the trends from 1940 by five-year periods, 1940-1945 experienced average annual rates of increase of approximately twenty per cent, 1945-1950 average annual rates of decrease of approximately one-half of one per cent, 1950-1955 average annual rates of increase of twelve per cent; 1955-1960 a period of almost complete stability (rates of increase averaged only two-tenths of one per cent), and 1960-1965 average annual rates of increase of three and a third per cent The turning points in these trends can be matched by development turning points: the frantic defense build up between 1940-1943, the shift of strategic importance from Alaska to elsewhere following the successful Aleutian campaign and the Pacific battles of 1943 and 1944, the virtual shut down of the Alaska defense establishment in the all too brief period of peace at the end of World War II, and, with only a minor diversion during the Korean War, the construction activities and defense staffing which established Alaska in a permanent and key position in the northern hemisphere defense system. It was not until the 1960's that the population trend assumed a relatively steady and moderate continuing growth, but even this was disrupted by the effects of the 1964 earthquake and the reconstruction period following. The regional population trends reflect the concentration of the main defense activities in the southcentral and interior regions and to a lesser degree in the southwest region, and the virtual absence of these forces of population change in the remaining two regions.

In contrast, native population experienced continuously increasing average annual rates of growth for the same five-year periods: 0.3%, 0.5%, 2.1%, 2.7%, and 2.8%. The native population trends have all exhibited some decline in annual rates of net natural increase during the last five years, but the general level of rates of growth have differed regionally. By five-year periods from 1940 through 1965, the average annual rates of increase for the southeast region fell from 2% during 1940-1945 to 1 2% for 1960-1965, while for the remaining regions during the ten years 1940-1950 native deaths exceeded births for most years or were barely met by births, but all experienced explosive rates of average annual increase following 1950 (the direct result of intensive and effective public health programs), with southcentral rates for 1960-1965 averaging 4.8%, southwest 3.8%, and the interior and northwest approximately 2%.

Population Estimates, 1970-2000

Many estimates have been made of the growth, nature, and distribution of Alaska's future population, but only two sets will be

TABLE 4

Annual Estimates of Total Alaska Resident Population and Components of Non-Native Population Change, 1940-1968

July 1,	Total Native	Total Non-Native	Military	Non-Native Civilian	Non-Native Net Change	Non-Native Population, Components of Change: Natural Increase	Military Change	Civilian Migration 1/
			(12-month average, thousands of persons)					
1940	32.5	42.5	1.0	41.5				
41	32.6	55.4	8.0	47.4	12.9	0.9	7.0	5.0
42	32.7	108.3	60.0	48.3	52.9	1.0	52.0	(0.1)
43	32.8	200.2	152.0	48.2	91.9	1.0	92.0	(1.1)
44	32.9	152.1	104.0	48.1	(48.1)	1.0	(48.0)	(1.1)
1945	33.0	106.0	60.0	46.0	(46.1)	1.3	(44.0)	(3.4)
46	33.1	65.9	19.0	46.9	(40.1)	1.5	(41.0)	(0.6)
47	33.3	74.7	25.0	49.7	8.8	1.5	6.0	1.3
48	33.5	86.5	27.0	59.5	11.8	1.7	2.0	8.1
49	33.7	96.3	30.0	66.3	9.8	1.9	3.0	4.9
1950	33.9	104.1	26.0	78.1	7.8	2.3	(4.0)	9.5
51	34.5	129.5	38.0	91.5	25.1	1.9	12.0	11.2
52	35.1	160.9	50.0	110.9	31.4	3.2	12.0	16.2
53	35.9	176.1	50.0	126.1	15.2	3.9	-	11.3
54	36.7	181.3	49.0	132.3	5.2	4.9	(1.0)	1.3
1955	37.6	183.4	50.0	133.4	2.9	5.0	1.0	(4.1)
56	38.6	181.4	45.0	136.4	(2.0)	5.0	(5.0)	(2.0)
57	39.7	188.3	48.0	140.3	6.9	5.3	3.0	(1.4)
58	40.7	172.3	35.0	137.3	(16.0)	4.9	(13.0)	(7.9)
59	41.9	178.1	34.0	144.1	5.8	5.1	(1.0)	1.7

Continued

TABLE 4

Annual Estimates of Total Alaska Resident Population and Components of Non-Native Population Change, 1940-1968

July 1,	Total Native	Total Non-Native	Military	Non-Native Civilian	Non-Native Net Change	Non-Native Population, Components of Change: Natural Increase	Military Change	Civilian Migration 1/
			(12-month average, thousands of persons)					
1960	43.1	184.9	33.0	151.9	6.8	4.6	(1.0)	3.2
61	44.3	190.7	33.0	157.7	5.8	4.6	-	1.2
62	45.6	197.4	33.0	164.4	6.7	4.7	-	2.0
63	46.9	204.1	34.0	170.1	6.7	4.8	1.0	0.9
64	48.2	207.8	35.0	172.8	3.7	4.9	1.0	(2.2) 2/
1965	49.5	217.5	33.0	184.5	9.7	5.0	(2.0)	6.7 2/
66	50.7	221.3	31.0	190.3	3.8	5.2	(2.0)	0.6
67	52.0	219.0	34.0	185.0	(2.3)	5.4	3.0	(10.7) 2/
68	53.0	224.0	34.0	190.0	5.0	5.5	-	(0.5)

1/ Parenthesis indicate out-migration.

2/ 1964 Alaska earthquake caused out-migration in 1964 and in-migration in 1965 (return of residents and workers engaged in reconstruction). Reconstruction completed by 1967.

Sources: Estimate of native population (based on census data and annual vital statistics) deducted from total resident population estimates in the following to calculate non-native population and components of change:

Estimates for 1940 through 1949, U.S. Bureau of the Census, Current Population Reports, Series P-25, No. 80, Washington, D.C., October 7, 1953.
Estimates for 1960 through 1966 from U.S. Bureau of the Census, Current Population Reports, Population Estimates, Series P-25, No. 348, Washington, D.C., September 1966.
Estimates for 1967 and 1968 from U.S. Bureau of the Census, Current Population Reports, Estimates of Population of States, Series P-25, No. 414, Washington, D.C., January 28, 1969.

TABLE 5

Annual Estimates of Alaska's Resident Non-Native and Native Populations, By Region, 1940-1968

July 1,	Southeast		Southcentral		Southwest		Interior		Northwest	
	Native	Non-Native	Native	Non-Native	Native	Non-Native	Native	Non-Native	Native	Non-Native
	(12-month average, thousands of persons)									
1940	6.5	19.5	4.0	11.0	10.8	2.2	3.5	7.5	7.7	2.3
1945	7.2	20.8	3.9	59.1	10.8	8.2	3.6	14.4	7.7	3.3
1950	7.9	22.1	3.8	51.2	10.8	7.2	3.7	21.3	7.7	2.3
1955	8.5	24.0	4.4	106.1	12.1	7.9	4.1	42.9	8.4	2.6
1960	9.2	26.8	5.5	103.5	14.3	6.7	4.6	45.4	9.4	2.6
61	9.4	28.0	5.8	110.2	14.9	4.7	4.7	43.8	9.5	2.8
62	9.5	28.5	6.1	111.7	15.5	8.1	4.8	46.2	9.7	2.6
63	9.6	29.1	6.4	116.0	16.1	8.1	4.9	47.0	10.0	2.7
64	9.7	31.2	6.7	117.1	16.6	7.6	5.0	46.0	10.2	3.1
1965	9.8	32.5	7.1	125.5	17.0	9.3	5.2	45.6	10.3	2.9
66	9.9	32.9	7.5	127.2	17.4	10.6	5.4	45.7	10.5	2.5
67	10.0	34.0	7.9	129.6	17.8	11.1	5.6	45.8	10.7	2.8
68	10.1	34.4	8.3	134.2	18.2	11.0	5.8	45.5	10.9	2.9

Source: Estimates for 1940, 1950, and 1960 rounded from regional population in decennial census reports. 1945 and 1955 estimated from vital statistics and school enrollment data (as index of migration). Total regional population annual estimates for 1961 through 1968 from estimates for election districts published in Alaska Department of Labor.

Native population for 1961 through 1968 estimated from vital statistics with adjustment for other factors (e.g., migration) projected from 1950-1960 experience.

discussed here. The U S. Bureau of the Census regularly makes several sets of projections for each state and the total United States on the basis of assumptions concerning the three factors which account for rates of population change: fertility, mortality, and net migration. Trends of each factor are determined from an examination of the experience of recent years. The future economic view presented by these population estimates is not a promising one, with continuous out-migration in all cases. Such a future is within the realm of the possible as it is, after all, a projection of trends which have been part of the recent past. But the view is not in accord with the more recent developments and prospects discussed in the last chapter. Alaska has clearly entered a totally new phase of development which should make past trends a poor guide to the future.

The second set of population estimates to be referred to is the lowest and highest cases in the U.S. Department of the Interior's market study for the Rampart power project (Table 6). Underlying these estimates is the assumption of a continuing significant annual net in-migration varying in absolute amount from period to period in response to anticipated economic developments. Estimates were computed from a major review and evaluation of all available and projected information on Alaska natural resources, national and world markets, industrial and transportation technology, economics, the anticipated effect of major federal and state programs and agencies devoted to development ends, etc., which resulted in estimates of major new large industries by type, location, quantities, etc.

Once the new industrial developments had been determined, measured, mapped, and scheduled, estimates were computed of new basic employment (based upon size and output of specific industries), supporting employment and additional population generated by total new employment (based upon national ratios). The future population of Alaska, in effect, was projected as that of 1960 plus additional population generated by new industrial developments. One implication of this is that the 1960 basic economy would continue as one of the "givens" in the future. This was made explicit in the defense-oriented sector of the population. The Department of the Interior study assumed virtually no change in the numbers or distribution of military personnel in Alaska and the number of dependents of defense personnel.

Within the non-defense-related population sector, the report makes the following observations concerning the future of the native. "Alaska's native people have long had a high natural rate of increase. With increase in public health programs, rates of survival have been improved, with corresponding acceleration in rates of natural increase. This indicates that in the future, Alaska's natives will be of increasing importance." The new economic developments anticipated by the report would provide natives with future employment opportunities "to make the transition from their present subsistence existence to a more self-supporting one with adequate income and employment." [3] No attempt is made to reflect the past differences in

TABLE 6

U. S. Department of the Interior Low and High Estimates

of Alaska Population by Regions: 1970-2000

Region	1970	1975	1980	1985	1990	1995	2000
				(thousands of persons)			
CASE I							
Southeast	58	72	107	126	151	174	226
Southcentral	118	132	153	175	209	231	263
Southwest	25	28	31	36	41	46	66
Interior	74	100	130	134	138	156	188
Northwest	19	24	31	42	51	62	77
TOTAL	294	356	452	513	590	669	820
CASE V[1/]							
Southeast	55	81	112	127	152	213	246
Southcentral	132	155	184	219	242	275	295
Southwest	25	28	31	36	40	53	73
Interior	75	103	133	138	164	200	232
Northwest	19	24	31	42	51	67	82
TOTAL	306	391	491	562	649	808	928

[1/] Population generated by introduction of aluminum industry (based upon imported bauxite and Rampart project power availability) has been eliminated from the high case in accordance with June 15, 1967, report conclusions.

Source: U.S. Department of the Interior, Rampart Project, Alaska - Market for Power and Effect on Natural Resources, Vol. 2 - Tables 68-70, pp. 501-602, January 1965.
U.S. Department of the Interior, Alaska Natural Resources and the Rampart Project, June 15, 1967, pp. iv, 16, 35.

the native and non-native population characteristics and behavior in the population estimates beyond 1970. The report's implication is, therefore, that from 1970 on, the increased native population of working age will be absorbed into the new employment opportunities on the same basis and rates as the non-native.

In comparing these projections of the future population with the past population trends in Alaska, in summary, it must be recognized that important assumptions have been made or must be implied. Population prior to 1970 was a product of a number of factors reflecting the differing rates of fertility, mortality, and migration among the three major population components being discussed in this section--the defense-related population, the native population, and the remaining population. These three major population components not only demonstrated differing patterns of behavior, but within each there were pattern changes over time and between regional divisions. The population estimates beyond 1970 presented in Table 6 reflect only changes attributable to economic developments, the creation of new basic employment and the additional population this would support on the basis of the same relations between basic and total employment, and employment and total population as exist for the nation as a whole. These estimates, in other words, are a projection of the development effect translated into population rather than a projection of Alaskan population on the basis of its present characteristics. There would have to be complete and automatic adjustment of population to development changes. All population, whether native or non-native, would have to participate in the development changes at the national rates and move freely to and from Alaska and within Alaska in response to changes in employment patterns.

If we are to be realistic in speculating on Alaska's future population, however, special consideration must be given to the native sector. The defense-related population will continue as it has in the past to reflect administrative decisions and policies. The non-native, non-defense population will retain its past characteristic of fluctuating primarily in response to economic development factors, with some increase in stability reflecting the evidence of the last decade that net natural increase has begun to play a growing role. The analysis of past native population trends has indicated that this sector responds primarily to changes in birth and death rates with relatively little movement until very recently within Alaska or out of Alaska. Unlike the other two major components of total population, however, it would not be realistic to assume that this will continue to be the pattern of future behavior.

II. ALASKA DEVELOPMENT AND NATIVE ALASKA

Following the first contacts with western civilization, most of the native Alaskans were simply by-passed by the course of economic development. There were important exceptions. The Aleuts were forced to become involved during the Russian period because they lived in the regions rich in fur seal and sea otter. . In the process their aboriginal society and culture were destroyed and their numbers drastically cut down. During the American period the coastal Eskimos suffered death from starvation and strange diseases brought in by the whalers who virtually extinguished the walrus and whale resources upon which they depended for survival. The southeast Indians managed to keep the white invaders at arm's length because of their savage and warlike reputations, but their downfall came near the end of the 19th century when commercial fishermen and cannery men from California and the northwest coast invaded and took over their fisheries. The turn of the arctic and interior Eskimo and interior Indians came when Alaska shifted from its colonial to its military period. Finally, all were embraced by the coming of the welfare state to Alaska in the 1930's when national programs designed to meet the needs of a 20th century urban-industrial society were uniformally applied to a people still far from that condition.

The results of these contacts between native Alaska and the now mainstream of Alaska's economic development did bring some benefits and opportunities for participation, but on the whole the story was a contradictory one of unconscious or conscious cruelty and unavoidable or needless human misery. During the colonial period the native was treated as part of the environment in which the exploitation was undertaken. If they could be turned to a use in serving the purpose of getting the resource out as easily and cheaply as possible, they might be enslaved (as with the Aleut) or recruited (as was the southeast Indian fisherman and his women) as a local work force in the harvest and processing of marine resources. If not, they were ruthlessly pushed aside while their traditional resources were exploited to the point of extinction by seasonally imported work forces (as was the case with the coastal Eskimo). The impact was on the whole destructive to traditional ways and to the native peoples themselves, and their economic participation marginal at best. Whether they participated or not, their very survival required adaptation of their traditional ways to the new conditions imposed by the altered environment.

A review of the official Alaska native position as stated in documents from the Russian period to the 1968 publication by the Federal Field Committee for Development Planning in Alaska of its contribution "to a fair and intelligent resolution of the Alaska Native problem," however, gives the impression of a clear policy of increasing the fullest participation of the Alaska native in the

development process and in the sharing of its benefits, an assimilation policy which has remained steadfast for more than a century and a half. But the record reveals that progress has been as static, and the 1968 report still finds the Alaska native for the most part living in "places where the population is largely of Native origin" and which are characterized by an "appallingly low income and standard of living, and the virtual absence of opportunity." 4

This part will take an overall view of the response of all of Alaska's natives to economic development since 1939 only in terms of degrees of participation for which some indices can be computed and make some preliminary future projections. The selection of the time period was partly a matter of convenience and availability of statistical evidence, but it also coincides with the period in which Alaska emerged from its pre-World War II colonial phase of economic development and special native health, welfare, and development programs were expanded or initiated. Economic participation requires as a first step that there be communication and contact between the two Alaskas, the native and the non-native. The population-development discussion of Part I will be resumed with the application of its type of analysis to the subject of the first step, that of achieving geographic proximity.

Native Population Response to Economic Development - the Geographic Dimension.

The total population projections discussed in the last part combined with observations on the different patterns and trends of native and non-native population, suggest a means of making a rough measurement of the degree of native population under-response to economic development in the past and a measure of the increased response needed in the future if population-economic development imbalances are to be avoided and native Alaskans are to be brought into contact with and eventual participation in the mainstream of development. The U.S. Bureau of the Census estimates were simply projections of past trends with certain assumptions concerning changes in fertility and natural increase, migration assumed simply to reflect recent past trends. The U.S. Department of the Interior estimates were based upon a combination of predictions of major economic changes that would alter past population trends by providing a broader job base for the support of future populations and awareness that public policy can effect the determining conditions. Applied to native population, the first method can be a means of predicting or projecting how many native people there will be in the State and where they would be located if they did not migrate from the region of their birth or present residence. This would be projections, in other words, assuming no native response to shifts in

economic development. The second method would provide a means of predicting where native population probably would be located if it were as completely mobile and responsive to economic change as the non-native. Applied to the past total Alaska native population, these would be used to compute hypothetical regional distributions. A comparison with the actual past distribution could provide a crude measure of the degree of past lack of responsiveness to economic development. The relative distribution of projected additional total population in these estimates applied to projected native population increases will provide an indication of the population movements required as a first step in social development.

Two sets of native population estimates are compared in Table 7. The first set of projections for the State and its regions assumed that in future the native population will not respond to economic development to any greater degree than it has prior to 1960 (the decade of the sixties was cut off because, as discussed above, it appears to be a period of major change) and that the projected level of population will reflect a progressively declining rate of net natural increase. This last needs explanation as the recent evidence suggests an opposite assumption of rising rates of net natural increase as being more likely.

The population projections on the basis of natural increase alone assume that through the effects of public health and family planning programs there will be a progressive decline in the rates of natural increase from those of the 1960's to approximately 2.0% per year by 1990 or 2000. The actual total Alaska and regional population levels reported by the census and estimates from vital statistics from 1940 to 1968 and the projections to the year 2000 on the basis of these assumptions will be taken as the base line from which to measure the degree of development response, made or required.

The second set of native population estimates is calculated from the U.S. Department of the Interior estimates of population from 1970 to 2000. The underlying assumptions of these estimates was that jobs created by new economic developments would support additional population above the 1960 levels in the same proportions as national ratios of employment to total population and that defense personnel and their dependents would remain constant at about the 1960 levels The discussion in Part I of non-native population trends in the past also suggested that their volatile nature reflecting in- and out-migration and migration within Alaska in response to fluctuating employment as the dominant determinant of the level of distribution of non-native population. The non-native, non-defense population prior to 1970 and the estimated increased non-defense population beyond together represent what might

TABLE 7

Alaska Native Geographic Response to Economic Development, 1940-2000

Year	Total Alaska	Southeast			Southcentral			Southwest			Interior			Northwest		
		1.	2.	3.	1.	2.	3.	1.	2.	3.	1.	2.	3.	1.	2.	3.
		(thousands of persons)														
1940	32.5	6.5	15.0	(7.5)	4.0	8.0	(4.0)	10.8	1.5	9.3	3.5	6.0	(2.5)	7.7	2.0	5.7
1945	33.0	7.1	14.5	(7.4)	3.8	9.0	(5.2)	10.8	1.5	9.3	3.6	6.0	(2.4)	7.7	2.0	5.7
1950	33.9	7.9	10.9	(3.0)	3.8	14.0	(10.2)	10.8	1.5	9.3	3.7	6.5	(2.8)	7.7	1.0	6.7
1955	37.6	8.5	10.1	(1.5)	4.4	18.0	(13.6)	12.1	1.0	11.1	4.1	8.0	(3.9)	8.4	0.6	7.8
1960	43.1	9.2	10.3	(0.9)	5.5	23.6	(18.1)	14.3	0.8	13.5	4.6	7.8	(3.2)	9.4	0.6	8.8
1965	49.7	10.2	11.3	(1.1)	7.0	29.1	(22.1)	17.0	1.5	15.5	5.2	7.1	(1.9)	10.3	0.7	9.6
1970	57.5	11.0	10.0	1.0	9.0	31.0	(22.0)	19.0	1.5	17.5	6.5	13.0	(6.5)	12.0	2.0	10.0
1975	69.0	13.5	15.0	(1.5)	11.0	33.0	(22.0)	22.5	1.5	21.0	8.0	17.0	(9.0)	14.0	2.5	11.5
1980	80.0	15.0	19.0	(4.0)	13.5	34.5	(21.0)	25.5	1.5	24.0	9.5	21.5	(12.0)	16.5	3.5	13.0
1985	94.5	17.5	23.0	(5.5)	16.0	41.0	(25.0)	30.0	2.5	27.5	11.0	23.0	(12.0)	20.0	5.0	15.0
1990	108.5	20.0	27.0	(7.0)	18.5	44.5	(26.0)	34.0	3.0	31.0	13.0	27.0	(14.0)	23.0	7.0	16.0
1995	122.5	23.0	32.5	(9.5)	21.0	47.0	(26.0)	38.5	4.5	34.0	14.0	30.0	(16.0)	26.0	8.5	17.5
2000	136.0	25.5	36.0	(10.5)	23.0	49.0	(26.0)	43.0	7.5	35.5	15.5	33.5	(18.0)	29.0	10.0	19.0

Basis of Projections:

Total Alaska: 1940-65 actual or estimates; 1970-2000 assumes progressively declining rates of natural increase to 2% by 2000 and no out-migration from Alaska.

Regions:
Col. 1 - Same assumptions as Total Alaska with no migration between regions 1970-2000.
Col. 2 - Total Alaska projections re-allocated to regions in same proportion as non-native, non-defense population regional distributions.
Col. 3 - Native population surplus or (deficit).

be called the "economic development effect" translated into population and geographic terms.

The 1940-1960 native population for total Alaska was allocated among the five major regions in the same proportion as the reported regional distribution of the non-native, non-defense population for the same period. This regional redistribution would be approximated only if native population had been and is as responsive to geographic shifts in economic development as the non-native. A comparison of these hypothetical distributions with the actual and projected distributions assuming no migration gives a partial measure of the degree to which native people have not been responsive to economic development forces in the past and the degree of geographic mobility they must achieve to be responsive to future developments Being at or getting to "where the action is" represents the first obvious step.

One conclusion to be drawn from these comparisons is that the southeast region is the only region in which major population movements would not have been necessary in the past nor in the future for the greater involvement of native people in Alaska's economic development. Social and economic data in the 1960 census, presented below, indicate some degree of correlation between this measure of economic development, response, and well-being of the people. The other four regions would require major movements of native populations to achieve an indicated population-development balance comparable to the southeast region.

The southwest and northwest regions obviously have major economically surplus population, but the interior and southcentral regions would appear to have substantial native population deficits in relation to level of economic development activity as indicated by non-native population trends and distribution. This might lead to the expectation that the economic and social conditions of the native population in the interior and southcentral regions would be greatly above the conditions of those in the remaining two regions. The comparisons of the indicators used above, on the contrary, suggest that the relative well-being of the native people in all of these regions does not vary significantly. Part of the explanation is that the interior and southcentral regional units used are not entirely appropriate to the analysis being attempted (i.e., measurement of the amount of movement of native population required for greater development involvement), although they were appropriate for the purposes for which they were originally defined (i.e., planning for general economics and social development of the State).

In these two regions 89% of the 1960 non-native population was concentrated in the two near-metropolitan regions of Anchorage and Fairbanks, the town of Kodiak, and related major defense centers as compared with only 26% of the native population of the two regions

(Table 8). Furthermore, within the urban centers they constituted a small minority group easy to overlook. In other words, another leg of the journey to achieve communication and contact with the mainstream remained, that of the movement from rural to urban places within the region. In the southeast Alaska case the urban-rural distribution was not so important in relation to contact between the two racial groups, as the non-native population was almost equally divided between rural and urban places given the nature of the economic development (the harvesting and processing of natural resources) as compared with the nature of the 1960 economic development of the interior and southcentral regions (maintaining garrisons). Since 1960 there have been changes both in the behavior of native population and in the economic development of these two regions.

Native Population Participation in Economic Development

The last section dealt with only one dimension, the space or geographic dimension, of the total change required for fuller participation of the native people in the mainstream of Alaska development. Geographic mobility is an important aspect of necessary change and adaptation of native population to development, and the experience of the 1960's has seen the native people themselves working toward this end in their political actions and in voluntary movement into the State's major growth centers. But formidable barriers still remain to be overcome. In addition to being geographically mobile, the native population must also have vocational mobility, and this in turn requires being qualified to take on the jobs offered and being accepted by the non-native community. The journey is more than one from one place on the map to another. It is a journey through time and between cultures with all of the uncertainties, complexities, and hardships this implies.

No simple measures of this complex of factors can be readily devised, but the population characteristics data in the census provide general indicators. Racial breakdown of population economic characteristics is not available in the census reports beyond the color classifications of white and non-white, but prior to World War II the non-white data could be treated as representing native for purposes of general analysis. For the 1939 census the non-white population composition was 97.3% native and only 2.7% other non-white. This last category was primarily Filipino and some oriental races engaged in fishing, fish processing, and services and, in any case, treated by the dominant white population as though they were really part of the native population. The "other non-white" category increased in size and relative importance as a result of an in-migration of Negroes with the armed forces, construction work, etc. The 1950 non-white category consisted of 94.5% native and 5.5% other non-white races, and in 1960 the composition had changed to 83.6% native and 16.4% other non-white. Fortunately for our present purposes, most of the new non-white population other than native was

TABLE 8

Regional Distribution of Non-Native and Native Population by Type of Place - 1960

Type of Place	Non-Native Population		Native Population		
	No. of Persons	%	No. of Persons	%	Natives as % Total
Southeast	**26,156**	**100.0**	**9,247**	**100.0**	**26.1**
Urban Places	13,555	51.8	2,962	31.9	17.8
Rural	12,601	48.2	6,285	68.1	33.3
Southcentral	**103,337**	**100.0**	**5,514**	**100.0**	**5.1**
Anchorage-Spenard	51,630	50.0	1,681	30.5	3.1
Anchorage Suburbs	12,825	12.4	426	7.7	5.
Kodiak City	2,318	2.2	370	5.8	12.4
Defense	21,420	20.7	-	-	-
Rural	15,144	14.7	3,087	56.0	16.9
Southwest	**6,687**	**100.0**	**14,314**	**100.0**	**68.1**
Defense	4,520	67.8	-	-	-
Rural	2,167	32.2	14,314	100.0	86.1
Interior	**44,490**	**100.0**	**4,638**	**100.0**	**9.4**
Fairbanks City	12,877	28.9	434	9.3	3.3
Fairbanks Suburbs	12,840	28.9	1,019	22.0	8.2
Defense	17,138	38.5	-	-	-
Rural	1,635	3.7	3,185	68.7	66.1
Northwest	**2,411**	**100.0**	**9,373**	**100.0**	**79.5**
Nome	708	29.4	1,608	17.2	69.4
Defense	1,056	43.8	-	-	-
Rural	647	26.8	7,765	82.8	92.3

Urban includes only places of 2,500 persons or more (except Nome) as listed in census reports.

Defense includes separate self-contained military bases and reservations of 100 or more persons listed on census worksheets. Population includes both civilian and military persons enumerated at such defense places. Breakdown by race not available, but number of natives at such places assumed to be negligible.

Source: U.S. Bureau of the Census unpublished worksheets.

affiliated with military Alaska and its heaviest concentration in the Anchorage and Fairbanks areas. These two centers did not experience any significant in-movement of native population until the mid 1960's. By deducting from the total Alaska non-white data the non-white military and Anchorage-Spenard and Fairbanks non-white civilian population, therefore, the balance of this category would still cover 98.6% of total Alaska native population in 1950 and 95.1% in 1960. With this relatively minor "loss" of native there would be a major deduction of other non-white population. The racial composition of the remainder would be changed to 97.4% native and 2.6% other non-white in 1950 and 93.9% native and 6.8% other non-white in 1960.

In Table 9 and the related discussion, the following census data have been taken as representative of the total native population characteristics: non-white population for 1939, non-white civilian population less Anchorage-Spenard and Fairbanks in 1950 and 1960. Although a five regional breakdown of most population data is possible for 1960 and for a limited number of characteristics for 1950 and 1939, employment data for these three years can only be presented regionally as southeast Alaska and the remainder of Alaska. For this discussion this will be satisfactory, as the southeast native population differs significantly in many respects from the remainder of the native population as discussed in the previous section.

Indices of the native population participation in the Alaska economy are given by the non-worker to worker ratios calculated from census reports. "Non-workers" are taken as all persons under 14 years of age and persons 14 years and over who are classified by the census as not being in the labor force (persons doing only incidental unpaid family work, students, housewives, retired workers, seasonal workers in the off-season who are not seeking employment, inmates of institutions, or persons who cannot work because of physical or mental disability). The labor force includes all persons classified as employed or unemployed under the Bureau of the Census definitions of these terms, as well as members of the armed forces. In Table 9 the non-worker category has been separated into the age brackets not normally found in the labor force (children and persons of retirement age) in order to indicate the role played by population increase in determining the ratio.

The non-worker-worker ratios for white population presented in Table 9 reflects the age-sex imbalances in this component of Alaska's total population. The increase over the twenty-year period from less than one non-worker per worker to slightly more than one in 1960 reflects the increase in military dependents and families connected with recent economic developments. The increase in the ratios among southeast Alaska natives from 2.26 in 1939 to 2.68 in 1960 reflects the population boom between 1950 and 1960, coupled with a relatively small increase in jobs available to natives. Whereas the population increase by 41% between October 1, 1939, and April 1, 1960, the labor force (including unemployed) increased by only 24%.

TABLE 9

Non-Worker-Worker Ratios, by Race, 1939, 1950, 1960

	Non-Workers[1/]			Workers	Non-Worker to Worker Ratio
	Under 14 yrs. & Over 65 yrs.	Others not in Labor Force	Total	Labor Force[2/]	
Non-White Civilian (Excluding Anchorage and Fairbanks in 1950 and 1960)					
Southeast Region					
Oct. 1, 1939	3,196	1,774	4,970	2,203	2.26
April 1, 1950	3,308	2,729	6,037	2,485	2.43
April 1, 1960	4,518	2,790	7,308	2,725	2.68
Remainder of Alaska					
Oct. 1, 1939	11,535	7,034	18,569	7,612	2.44
April 1, 1950	11,781	6,773	18,554	7,213	2.57
April 1, 1960	16,670	11,269	27,939	5,707	4.89
Total White Population					
Oct. 1, 1939	8,660	7,474	16,134	23,036	0.70
April 1, 1950	21,606	14,674	36,280	56,463	0.64
April 1, 1960	59,509	28,809	88,318	86,331	1.02

1/ All persons under 14 years of age and persons 14 years and over not classified as members of the labor force (unpaid family workers, students, housewives, retired workers, inmates of institutions, disabled persons unable to work, etc.).

2/ All persons classified as employed or unemployed by Bureau Census.

Source: U.S. Bureau of the Census, The 18th Decennial Census of the U.S. Census of Population 1960, Vol. 1, Part 3 (USGPO: 1963); A Report of the 17th Decennial Census of the U.S. Census of Population: 1950, Vol. II, Part 51 (USGPO: 1953).

The compounding effects of public health programs in decreasing the death rates and a sharp drop in the industrial sector of the economy in which most natives participate is dramatically demonstrated by the data for the native population in the remainder of Alaska. Native population remained constant over the first decade (25,956 in 1939 and 25,955 in 1950) and increased 30.4% between 1950 and 1960 to 33,839. Between 1939 and 1960, on the other hand, there was a decline in the labor force from 7,612 to 5,707. Together these developments resulted in a rise in the non-worker to worker ratio from 2.44 to 4.89.

The population increase due to the new public health drives of the 1950's coincided with the crash of the salmon fisheries and salmon canning in which most of the native population found their regular employment other than subsistence activities which did not enter into the main economy of the State. The number of persons of all races engaged in all fisheries (including beach seiners) and in transporting fish to processing plants fell from 28,609 and 27,544 during the 1949 and 1950 seasons to 11,992 and 15,101 during the 1959 and 1960 seasons. The mid-season employment (July) in food processing (primarily fish curing, canning, and freezing) fell from 11,500 and 11,900 in 1949 and 1950 to 5,200 and 7,100 in 1959 and 1960. [5]

Unemployment data reported in the census are distorted by the high seasonality in much of Alaska's basic economy, but the comparison of the unemployment rates of natives with white population at the dates of the census reports indicates the relative position of the native worker to the non-native. Of the native labor force in the southeast region, 16.6% were unemployed during the census reference week in April, 1960, as compared with 29.6% unemployed in the remainder of Alaska. The white labor force reported an unemployment rate of 11.1%.

Since the 1960 census there has been increased migration of natives from their traditional village areas to the growth centers of the State. The Bureau of Indian Affairs and the various federal and State manpower training and area economic development programs have focused upon educating, training, and preparing native workers to take a greater part in meeting Alaska's labor needs. All of this leads to the expectation that the employment situation has been improved, but a 1968 over view states the contrary. "Among Alaska Natives generally, more persons are unemployed or are seasonally employed than have permanent jobs. More than half of the work force is jobless most of the year; for them, food gathering activities provide basic subsistence. Only one-fourth of the work force has continuing employment. The Alaska Native work force, urban and rural, is estimated to be composed of 16,000 to 17,000 persons... 50 to 60 per cent are jobless in March and September, according to recent semi-annual reports compiled by the Bureau of Indian Affairs. At these times, only half of those employed have permanent jobs. In the summers, when no estimates are compiled, joblessness among

Natives across the state may drop to 20 or 25 per cent. ...In urban areas, Native unemployment appears to be higher than among non-Natives. Lacking education and marketable skills, the villager is not usually equipped to compete in the job market. ... Year-round jobs in most villages are few. Typically, the opportunities are limited to positions such as school maintenance man, postmaster, airline station agent, village store manager, and possibly school cook or teacher aide. In these places, other adults gain income through the sale of furs, fish, or arts and crafts; find seasonal employment away from the village as fire-fighters, cannery workers, or construction laborers; depend upon welfare payments, make their National Guard income stretch mightily; or, as is usually the case, (1) provide for the bulk of their food supply by fishing, hunting, trapping, and other activities of food gathering; and (2) rely upon a combination of means to obtain cash needed for fuel, some food staples, and for tools and other supplies necessary to the harvest of fish and wildlife." [6]

Another general measure of relative participation is a comparison of income received by different population groups. Annual estimates of personal income received by resident Alaskans are available back to 1950. These are up-dated and published along with the materials for all other states in the August issues of the Survey of Current Business and afford a means of measuring the relative economic progress in Alaska as a whole. In originally establishing the series for Alaska, however, the Office of Business Economics also was interested in determining the causes of Alaska's high income level. The most obvious factor was relative cost of living. Taking note that 1957-1958 consumer prices in Anchorage and Fairbanks were 35% to 45% above Seattle, the report concluded "that if prices are taken into account, per capita real income in Alaska is no higher than that in the country as a whole, at most, and possibly somewhat less." Another important factor was discovered when data collected for the bench-mark year 1957 was organized to present the components of per capita income in four major economic groups: [7]

Military	$1,806
Native economy	1,231
Natural resource economy	2,052
Defense-oriented economy	3,591
Total Alaska	$2,408

Alaska's high 1957 income level (117% of the national average) was thus seen to stem largely from the State's defense-oriented economy located primarily in the southcentral part of the State (175% of national average). It was also clearly revealed that Alaska had an area of poverty which could be identified as the "native economy" and measured (60% of the national average).

These conclusions were further confirmed by another investigation which organized the annual personal income estimates for the period 1957 through 1960 into the five major geographical regions used here and arrived at a series of total and per capita figures which divide the total State economy into regional rather than economic components. A comparison of 1960 regional levels of income with regional distribution of native population reported by the U.S. Census indicated a marked correlation between the incidence of low income and native population concentration. [8]

Region	Per Capita Income	Native Population as % to the Regional Population
Southeast	$2,765	26.1
Southcentral	3,046	5.1
Southwest	1,952	68.1
Interior	2,840	9.4
Northwest	1,604	79.5
Total Alaska	$2,781	19.0

A more recent study of personal income within Alaska found support for the conclusion that since 1960 the poor have been getting poorer and the rich have been getting richer. [9] Per capita income was calculated for all census districts on the basis of wages and salaries, unemployment benefits and welfare payments reported by government agencies and annual population estimates for each district. An urban-rural comparison was made by comparing a combination of the four census districts containing the largest urban centers in the State with an entire rural region consisting of four contiguous census districts in western Alaska. Other rural census districts were not included because of estimating inaccuracies associated with their small numbers or because they were islands of intense economic activity, such as electronic defense installations or construction, which caused district wage totals to be very misleading as to the actual economic condition of the permanent residents. In 1960 the native population in the urban census districts was only 4.7% of the total population, but in the selected western rural districts it was 88.7%. Therefore, the comparisons can be taken as a reasonable index of the income position of native Alaskans relative to other Alaskans.

The final comparisons of income made in this study are summarized in Table 10. The supporting tables of the study indicate that between 1961 and 1967 per capita income rose 29% in Anchorage, 38% in Fairbanks, 34% in Ketchikan, and 8% in Juneau (Juneau's 1967 per capita income, however, was still higher than any of the other urban districts). These data did not reflect changes in price levels which also moved upward in all districts since 1961 (Anchorage 7.8%,

TABLE 1D

Comparison of Urban Versus Western Alaska Civilian Per Capita Incomes, Based on Wage Income, Unemployment Benefits, and Welfare Payments[1/]

	Calendar Year 1961	Calendar Year 1962	Calendar Year 1963	Calendar Year 1974	Calendar Year 1965	Calendar Year 1966	Fiscal Year 1967
URBAN ALASKA, consisting of: Anchorage, Fairbanks, Juneau, and Ketchikan Census Districts	$2,410	$2,467	$2,562	$2,878	$2,953	$3,026	$3,118
WESTERN ALASKA, consisting of: Kobuk, Wade-Hampton, Bethel, and Kuskokwim Census Districts	$ 630	$ 602	$ 607	$ 609	$ 556	$ 575	$ 614
RATIO: Urban Per Capita Income[1/] to Western Alaska Per Capita Income[1/] (Excluding Nome)	3.8	4.1	4.2	4.7	5.3	5.3	5.1

[1/] Although proprietor's income and several other income categories are not reflected in the per capita income figures above, 80 per cent of all civilian income in Alaska is accounted for by the sources used. Therefore, it is unlikely that inclusion of all cash income would substantially alter the ratios of urban per capita income to that of Western Alaska. However, the ratios would be decreased by the inclusion of estimates for non-cash income from subsistence hunting and fishing. No such estimates are available, but it is known that subsistence activities are an important aspect of the economy of Western Alaska.

Source: James W. Sullivan, Personal Income Patterns in Alaska, Alaska Review of Business and Economic Conditions, Vol. VI, No. 1, University of Alaska, Table 14.

Fairbanks 9.3%, Ketchikan 11.6%, and Juneau 14.5%). In contrast, the western rural area experienced a per capita income decline over the same period. The ratio of urban to western Alaska per capita income rose from 3.8 in calendar year 1961 to 5.1 in fiscal year 1967. The report ends with a statement of the only conclusion possible. "In conclusion, actual buying power per person and living standards are definitely not improving in rural areas of the state, although living standards steadily increase in large urban centers. Consequently, disparities in living standards are continuing to increase. In Alaska almost all victims of poverty, in both urban and rural areas, are non-white -- chiefly Eskimo, Indian, or Aleut."

Educational Prerequisites for Native Involvement in Economic Development

This part opened with an analysis of the dimensions of the geographic prerequisites for increased native participation in Alaska's economic development -- moving from the village setting to "where the action is." A regional comparison of native population projections solely on the basis of net natural increase with population based upon employment projections indicated that the two regions with the largest present native populations and prospects for greatest future growth (Southwest and Northwest) are also the two regions with the lowest employment growth potential. The total number of new jobs anticipated at all levels in these regions, and which would be open to all persons without regard to previous residence or race, might even be exceeded by the additions to native population in these regions. There will be an urgent need of a large but highly intelligent relocation of population from these areas if a natural out-migration does not take place. A 1967-68 BIA study of "employment non-availability" of village natives suggests that reluctance to move to employment opportunities is a compound of factors arising from ignorance and fears. One job to be performed by education for greater native economic participation is knowledge of what lies beyond the village horizons and what is required of the native who would move on.

The measures of economic participation gave other dimensions of the problem of increasing native participation. The non-worker to worker ratios by race (one for white and three for non-white Alaskans) and per capita income comparisons indicated the tremendous gap between natives and other Alaskans which must be overcome in order to bring all population groups up to the same levels of economic participation. A racial comparison of employment patterns leads to the further general conclusion to be drawn that throughout the State as a whole the occupational or industrial sectors in which the greatest employment expansion will take place are those in which few native people are today to be found. As a further minimum in considering education goals and programs, therefore, there is an urgent need for vocational education and retraining programs which are keyed to the most perceptive study of general economic trends.

But this is not enough. Since the launching of native education programs under Sheldon Jackson and the Office of Education in 1884 to the present Federal and State vocational training and special education programs, Alaska's native peoples have received the benefits of such preparation for increased economic participation. The results have been less than impressive. Because of the remoteness and isolation of many native Alaskans, these benefits have not been evenly distributed, but even where the locational conditions were most ideal (the southeast region) education and vocational training have yielded disappointing results.

At the 56th Annual Convention of the Alaska Native Brotherhood held in November 1968, I was asked to give a keynote address dealing with this dilemma.[10] I used as the basis of the address a review of the experience of the region and the Tlingit, Haida, and Tsimshian people during the decade of the 1950's when fishing suffered its deepest depression and forest products were launched as a major economic development with the construction of two large pulp mills at Ketchikan and Sitka. Although the region's income and employment levels were impressively expanded between 1950 and 1960, an analysis of the economic and social data presented in the two census revealed that there had been virtually no shift of native workers from the declining fisheries to the rapidly expanding forest products industries. All measures of total economic participation, in fact, indicated declining rates for natives between 1950 and 1960 as compared with sharply increasing rates for non-natives. Population data (adjusted for factors related to Bureau of Indian Affairs programs at Mt. Edgecumbe near Sitka) indicated a migration of natives from these two centers of development as compared with a 31.3% increase of non-native population in the Ketchikan area and a 99.7% increase in the Sitka area. The conclusion drawn was that the new jobs and the new income created by this development were taken up by more intensive utilization of the non-native labor force and a significant immigration of additional workers from Outside.

But an even more striking conclusion was drawn from an examination of these data for the 1950's. The vital statistics for the decade reported a total net natural increase (excess of births over deaths) for the natives resident in the southeast region which was more than twice the native population increase computed by deducting the 1950 from the 1960 census data. The "loss" was 20% of the 1950 population. Living through this period of hardship among fishermen and worker shortages in the new forest products industries, I was aware of the difficulties of changing fishermen into mill operatives and loggers from my involvement in a program in 1953-54 which attempted this on a crash basis with predictable results of total failure. Accepting welfare (at that time in the form of distribution of surplus agricultural products) was less degrading to a fisherman than surrendering himself to the tyranny of the time-clock and the meaninglessness of factory labor. I was

also sadly aware that migration in a growing number of cases was preferable to either, if it held out the hope of remaining what you had always been or even a shadow of what you had been.

Everything that we are able to anticipate concerning Alaska's future, and of the North in general, is that it will move even further than the present from forms of employment and ways of living which are compatible with the traditional ways of Alaska's natives. Given time, possibly a generation of time, the needed adjustments might be made, but the process would be costly in terms of human well-being and loss. Greater involvement of the native peoples of the North in these new economic futures of the North and eventually beyond the geographic boundaries of the North with a minimum of suffering requires more from education than simply knowledge and training. This greater challenge is difficult to grasp or to formulate in words. Speaking to representatives of Alaska's natives in November 1968, my concluding remarks were such an attempt.

> "Now I am ready to discuss what you as members of the Alaska Native Brotherhood and Alaska Native Sisterhood can or should do about Alaska development. In light of what has already been said, we cannot or should not simply sit back and let things happen. You might argue that major development, such as the establishment of pulp mills, is something beyond our control. We do not have the financial or technical means to do this ourselves and therefore, must rely upon outside sources and decisions in which we play no part. This is true. But this organization and its members should keep as fully informed on planned developments as possible. You should be constantly concerned with anticipating the future in order to prepare for it...For years you have made education of your youth one of your primary concerns. This is one means of helping your young people prepare themselves to take a greater role in the emerging future. But there is also a need for continuing education and training for all age-groups, for the future will be a constantly changing one. You can assist your people in planning for participation through helping them to anticipate the changes and changing requirements. As in the past, your political influence and power must continue to be applied effectively to promote objectives which you have carefully chosen as being desirable. In addition to support of education and training programs, you should inaugurate programs of study of forms of economic organization, such as marketing or producers cooperatives, which realize additional developments made possible by the larger developments. Participation requires anticipation,

planning, education, training, and organization. But we also have a role to play in shaping the future as well as participating in it. An urban sociologist, Edmund Bacon, in his book Design of Cities has said, 'We are in danger of losing one of the most important concepts of mankind, that the future is what we make it'."

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